REMARKS

By way of the present response, independent claims 1, 7 and 13 are amended. Applicants respectfully request reconsideration and withdrawal of the rejections of the claims in view of the above amendments and the remarks advanced below.

Claims 1, 6, 7, 12, 13, 18, 31, 32 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,523,070 to Stapleton et al. (Stapleton) in view of U.S. Patent No. 6,603,741 to Poulter et al. (Poulter). This rejection is respectfully traversed at least for the reasons provided below.

The Office asserts that Stapleton allegedly teaches a method for identifying one of a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, and the n inputs of each succeeding controller in the cascade are respectively connected to n outputs of a preceding one of the controllers (Fig. 2, col. 3, ll. 11-15), the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server (Fig. 2 and Fig. 4, col. 4, ll. 14-24, connection establishment by devices through downstream or upstream connectors).

Further, the Office acknowledges that Stapleton does teach the feature of monitoring the status of the channels but does not explicitly teach the monitoring of the channels for link pulses wherein the presence of link pulses on one of the communication channels indicates that that particular communication channel are not currently being used for data transmission by the server and is available and providing the establishment of the connection channel. However, in related art, the Office relies upon Poulter to allegedly teach "a link pulse exchange method wherein link pulses are used to establish a connection negotiate between for example a device and a server (col. 4, ll. 40-46). Through the negotiation process two network devices are able to monitor each other by way of the link pulses and complete an auto-negotiation process. It would have been obvious to one of

ordinary skill in the art at the time of the applicant's invention to utilize link pulses as taught by Poulter in combination with the channel selection method as taught by Stapleton. One of ordinary skill in the art would have been motivated to make such a combination wherein Stapleton teaches the need to change communication channels often (col. 5, ll. 3-15) and Poulter teaches that through the link pulse exchange the highest common mode can be negotiated (col. 4, ll. 49-51)." (See page 5 of the Office Action).

It is respectfully submitted that Stapleton and Poulter do not teach, suggest or otherwise render obvious the combinations of features recited in independent claims 1, 7 and 13. More particularly, neither Stapleton nor Poulter disclose the claimed features of "monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers," as recited in amended claims 1 and 7, and similar features set forth with respect to a system in independent claim 13 [emphasis added].

The Stapleton apparatus is a communication device including the use of discrete signal wires in additional to the communications signal wires to determine the position of the devices in the stack/chain. Moreover, Stapleton discloses additional electronic circuitry that sends a pulse down the additional wire whereas each device adds to the length of the pulse. Then the length of the pulse is used to determine the devices position in the stack/chain. Additionally, Stapleton provides yet another signal wire and electronic circuitry that senses the current to determine if a device is at the top or bottom (end) of the stack/chain. And more distinctly, Stapleton discloses utilizing a parallel communications interface (1a, 1b, 2a and 2b in Fig. 5 and col. 5, lines 3-23) instead of a series cascading communications interface as shown in Fig. 2 at 24(1) and 25(1), for example of the present application.

Further, the present invention also defines multiple communications connections through the controllers (22) which are connected in series to a Hub Server (12) whereas Stapleton utilizes a parallel communications interface and does not disclose or suggest a series of cascading communication connections to any type of Hub or switch. Thus, Stapleton fails to describe or suggest the claimed structural features of a plurality of communication channels available for communication between one of a plurality of devices

and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: **monitoring**, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, **wherein the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers**, as set forth in independent claims 1, 7 and 13, as claimed.

The Office fails to demonstrate how Poulter remedies the above-mentioned shortcomings of Stapleton. Poulter describes packet-based data communication networks utilizing an Ethernet or similar network. This data may be transferred between devices at at least two different rates via port 2 and link or cable 3 as shown in FIG. 2. The devices being able to establish a selected data rate by means of auto-negotiation (see, FIG. 3). With respect to Poulter, the Office asserts that it would have allegedly been obvious to utilize link pulses in combination with the channel selection method of Stapleton. However, even if one were to consider this proposed combination, there is nothing described in Poulter that would have suggested modifying Stapleton to meet the claimed features that are missing in Stapleton. Hence, no combination of the documents would have suggest that which is not claimed. Accordingly, it is respectfully requested that the rejection based on Stapleton and Poulter be withdrawn.

The Office Action also includes a rejection of claims 2-5, 8-11, 14 and 15 under 35 U.S.C. § 103(a) as being obvious over Stapleton and Poulter in view of U.S. Patent No. 5,754,552 to Allmond et al. (Allmond); a rejection of claims 16 and 34-36 under 35 U.S.C. § 103(a) as being obvious over Stapleton and Poulter in view of U.S. Patent No. 5.883.894 to Patel et al. (Patel); and a rejection of claim 17 under 35 U.S.C. § 103(a) as being obvious over Stapleton, Poulter and Patel in view of Allmond. However, the Allmond and Patel patents, whether considered individually or in any combination with Stapleton and Poulter, fail to teach or suggest each and every feature recited in independent claims 1, 7 and 13, as presently claimed.

Allmond describes a communication protocol detection system and method for network systems for enabling a network system to detect and interface on or more network devices operating within domains pertaining to different communication protocols. (Abstract). In column 13, starting at line 21, Allmond describes a repeater (302) including a plurality of interface modules (400a to 400x), each including a separate transceiver to transmit data on a port link (402) at the correct repeater module (406 to 412), which can be operating on 10Base-T and 100Base-T protocols, for example. A processor (420) in the repeater monitors and controls the status of the modules according to link signal provided by the interface modules and enables either the 10Base-T transceiver or the 100Base-T transceiver depending on the protocol of the network device. However, the Allmond patent does not teach or suggest, among other things, a plurality of communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers, as presently claimed. Furthermore, *only one* communication channel appears to be formed through each of the interface modules of Allmond. Thus, Allmond indeed does not teach or suggest the claimed features relating to monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers, as presently claimed

Patel also does not teach or suggest the claimed features missing in Stapleton and Poulter. With reference to column 4, lines 20-31, Patel describes a system including shared auto-negotiation logic for a multiple port intermediate network device. In Patel, a shared auto-negotiation unit is coupled to a set of the ports rather than implementing an auto-negotiation state machine in each of the ports. (See col. 4, lines 2-4 and 32-40 of Patel). However, there is no mention or suggestion anywhere in Patel of a plurality of

communication channels available for communication between one of a plurality of devices and a server, wherein the plurality of communication channels are formable between the server and cascadedly arranged controllers, each controller associated with one of the devices, including n inputs, n > 1, and a switching device configured to allow connection between one of the n inputs and the associated device and connection through the controller between the remaining n -1 inputs and n-1 outputs, the method comprising: monitoring, at each of the cascadedly arranged controllers, each of the plurality of communication channels between the controller and the server, wherein the n inputs of each succeeding controller in the cascade are respectively connected in series to n outputs of a preceding one of the controllers, as presently claimed. Instead, Patel describes a system that utilizes a multiplexer (*i.e.*, an [n]x1 PorMux 202) to connect between the ports and the auto-negotiation unit (see, column 4, lines 50-55 of Patel). Accordingly, no combination of Stapleton, Poulter, Allmond and Patel would have taught or suggested what is recited in independent claims 1, 7 and 13, as presently claimed.

Contrary to the teachings of the references described above, the claimed invention is directed to a system, method, and computer readable medium that enables identification of identifying at least one of a plurality of communication channels available for communication between one of a plurality of devices and ports of a server. Each communication channel is connectable to a respective port on the server, which allows for monitoring each of a particular port of the server associated with the channel, determining whether at least one of the plurality of communication channels and associated port is being used for the transmission of link pulses by the server, and establishing a connection between the device and the server using one of the available communication channels associated with the port determined to have the link pulses. To form and monitor the communication channels, the claimed invention utilizes controllers in a cascading arrangement to allow for communication channels to be selectively formed either through one or more of the controllers or to a device associated with one of the controllers. These features provide a number of advantages over the teachings of the applied references, including enabling equipment in a network to be conveniently rearranged, added or removed as desired, enabling easier servicing of network communication buses since the buses need not be bundled together, lowers costs, and provides increased reliability since network equipment may be provided with a simple, universal interface arrangement.

In view of the present amendments and remarks, the Office is respectfully requested to reconsider and withdraw the rejection of independent claims 1, 7 and 13. Since claims 2-6, 8-12, 14-18 and 31-36 depend from, and therefore contain the limitations of claims 1, 7 and 13, they are also distinguishable over the cited references and patentable in the same manner.

Based on the foregoing, Applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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